

What is claimed is:

1. An image forming apparatus comprising:
reading means for reading images recorded on

5 originals;

image forming means for forming images on blank
sheets based on the read images;

stacking means for stacking a plurality of insert
sheets which are fed in a manner bypassing image
10 formation by said image forming means and inserted
between said sheets having images formed thereon by
said image forming means;

15 inserter means for reading out the stacked insert
sheets and inserting same between the sheets having
images formed thereon;

designating means for designating at least one
position in said sheets having images formed thereon
for insertion of at least one of the insert sheets by
said inserter means;

20 detecting means for detecting an insert sheet to
be inserted first when a plurality of positions have
been designated by said designating means; and

discharging means operable when said detecting
means detects that the insert sheet read out by said
25 inserter means is not the insert sheet to be inserted
first, for discharging insert sheets from said stacking
means until the insert sheet to be inserted first is

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detected.

2. An image forming apparatus according to claim 1, wherein said stacking means comprises a plurality of trays for stacking said plurality of insert sheets in a divided manner, the image forming apparatus further comprising selecting means capable of selecting between two types of stacking modes consisting of a first stacking mode in which a same type of insert sheets are stacked on each of said plurality of trays and a second stacking mode in which plural types of insert sheets are stacked in order in which they are inserted on each of said plurality of trays, and wherein said discharging means discharges insert sheets from said stacking means when said second stacking mode is selected by said selecting means.

3. An image forming apparatus according to claim 1, further comprising post-processing means for stacking said sheets having images formed thereon by said image forming means in a fashion mixed with insert sheets inserted by said inserter means, and for carrying out post-processing on the mixedly stacked sheets.

4. An image forming apparatus according to claim 3, wherein said discharging means discharges said insert sheets to a location other than said post-processing means.

5. An image forming apparatus according to claim

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1, comprising a conveyance path for insert sheets, and wherein said detecting means is provided on said conveyance path for insert sheets.

6. An image forming apparatus comprising:
5 reading means for reading images recorded on originals;

image forming means for forming images on blank sheets based on the read images;

stacking means for stacking a plurality of insert
10 sheets which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means;

15 inserter means for reading out the stacked insert sheets and inserting same between said sheets having images formed thereon;

designating means for designating at least one position in said sheets having images formed thereon for insertion of at least one of the insert sheets by
20 said inserter means;

detecting means for detecting an insert sheet to be inserted first when a plurality of positions have been designated by said designating means;

interrupting means for interrupting a sheet
25 inserting operation of said inserter means when at least one of the insert sheets has jammed while being inserted by said inserter means; and

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discharging means operable when said detecting means detects that the insert sheet read out by said inserter means is not the insert sheet to be inserted first after the apparatus has recovered from the interruption by removing the at least one jammed insert sheet, for discharging insert sheets from said stacking means until the insert sheet to be inserted first is detected, and for further discharging insert sheets from said stacking means up to an insert sheet immediately preceding a same type of sheet as the at least one jammed insert sheet.

7. An image forming apparatus according to claim 6, for stacking said plurality of insert sheets in a divided manner, the image forming apparatus further comprising selecting means capable of selecting between two types of stacking modes consisting of a first stacking mode in which a same type of insert sheets are stacked on each of said plurality of trays and a second stacking mode in which plural types of insert sheets are stacked in order in which they are inserted on each of said plurality of trays, and wherein said discharging means discharges insert sheets from said stacking means when said second stacking mode is selected by said selecting means..

8. An image forming apparatus according to claim 6, further comprising post-processing means for stacking said sheets having images formed thereon by

said image forming means in a fashion mixed with insert sheets inserted by said inserter means, and for carrying out post-processing on the mixedly stacked sheets.

5 9. An image forming apparatus according to claim 8, wherein said discharging means discharges said insert sheets to a location other than said post-processing means.

10 10. An image forming apparatus according to claim 6, comprising a conveyance path for insert sheets, and wherein said detecting means is provided on said conveyance path for insert sheets.

15 11. An image forming apparatus comprising:
reading means for reading images recorded on
originals;

image forming means for forming images on blank sheets based on the read images;

20 stacking means for stacking a plurality of insert sheets which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means;

25 inserter means for reading out the stacked insert sheets and inserting same between said sheets having images formed thereon;

mixed stacking means for stacking in a mixed fashion the sheets having images formed thereon by said

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image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon;

insert sheet discharging detecting means for
5 detecting that said insert sheets have been discharged to said mixed stacking means; and

sheet feeding control means responsive to
detection of discharging of said insert sheets by said
insert sheet discharging detecting means, for
10 controlling such that feeding of said blank sheets to said image forming means be started.

12. An image forming apparatus comprising:
reading means for reading images recorded on
originals;

15 image forming means for forming images on blank sheets based on the read images;

stacking means for stacking a plurality of insert sheets which are fed in a manner bypassing image formation by said image forming means and inserted
20 between the sheets having images formed thereon by said image forming means;

inserter means for reading out the stacked insert sheets and inserting same between said sheets having images formed thereon;

25 mixed stacking means for stacking in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by

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said inserter means between the sheets having images formed thereon;

image formed sheet discharging detecting means for detecting that said sheets having image formed thereon have been discharged to the mixed stacking means; and

reading control means responsive to detection of discharging of said insert sheets by said image formed sheet discharging detecting means, for controlling such that reading of said insert sheets by said inserter means be started.

13. An image forming apparatus comprising:
reading means for reading images recorded on originals;

image forming means for forming images on blank sheets based on the read images;

stacking means for stacking a plurality of insert sheets which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means;

inserter means for reading out the stacked insert sheets and inserting same between said sheets having images formed thereon;

mixed stacking means for stacking in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images

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formed thereon;

insert sheet discharging detecting means for detecting that said insert sheets have been discharged to said mixed stacking means;

5 sheet feeding control means responsive to detection of discharging of said insert sheets by said insert sheet discharging detecting means, for controlling such that feeding of said blank sheets to said image forming means be started;

10 image formed sheet discharging detecting means for detecting that said sheets having image formed thereon have been discharged to the mixed stacking means; and

reading control means responsive to detection of discharging of said insert sheets by said image formed
15 sheet discharging detecting means, for controlling such that reading of said insert sheets by said inserter means be started.

14/ A control method of controlling an image forming apparatus, comprising the steps of:

20 reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

25 reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having

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images formed thereon by said image forming means and inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

5 designating at least one position in said sheets having images formed thereon for insertion of at least one of the insert sheets by said inserter means, by designating means;

10 detecting an insert sheet to be inserted first by detecting means when a plurality of positions have been designated by said designating means; and

15 discharging insert sheets from said stacking means until the insert sheet to be inserted first is detected, by discharging means when said detecting means detects that the insert sheet read out by said inserter means is not the insert sheet to be inserted first.

20 15. A control method according to claim 14, wherein said stacking means comprises a plurality of trays for stacking said plurality of insert sheets in a divided manner, the control method further comprising a step of selecting by selecting means between two types of stacking modes consisting of a first stacking mode in which a same type of insert sheets are stacked on
25 each of said plurality of trays and a second stacking mode in which plural types of insert sheets are stacked in order in which they are inserted on each of said

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plurality of trays, and wherein said discharging step comprises discharging insert sheets from said stacking means when said second stacking mode is selected by said selecting means.

5 16. A control method according to claim 14, further comprising the steps of stacking said sheets having images formed thereon by said image forming means in a fashion mixed with insert sheets inserted by said inserter means, and carrying out post-processing
10 on the mixedly stacked sheets, by post-processing means.

 17. A control method according to claim 16, wherein said discharging step comprises discharging said insert sheets to a location other than said post-
15 processing means.

 18. A control method according to claim 14, wherein said detecting means is provided on a conveyance path for insert sheets.

 19, A control method of controlling an image
20 forming apparatus, comprising the steps of:

 reading images recorded on originals by reading means;

 forming images on blank sheets based on the read images by image forming means;

25 reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image

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forming means and inserted between the sheets having images formed thereon by said image forming means and inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

designating at least one position in said sheets having images formed thereon for insertion of at least one of the insert sheets by said inserter means, by designating means;

detecting an insert sheet to be inserted first by detecting means when a plurality of positions have been designated by said designating means;

interrupting a sheet inserting operation of said inserter means by interrupting means when at least one of the insert sheets has jammed while being inserted by said inserter means; and

discharging insert sheets from said stacking means until the insert sheet to be inserted first is detected, and further discharging insert sheets from said stacking means up to an insert sheet immediately preceding a same type of sheet as the at least one jammed insert sheet, by discharging means, when said detecting means detects that the insert sheet read out by said inserter means is not the insert sheet to be inserted first after the apparatus has recovered from the interruption by removing the at least one jammed insert sheet.

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20. A control method according to claim 19,
wherein said stacking means comprises a plurality of
trays for stacking said plurality of insert sheets in a
divided manner, the control method further comprising a
5 step of selecting by selecting means between two types
of stacking modes consisting of a first stacking mode
in which a same type of insert sheets are stacked on
each of said plurality of trays and a second stacking
mode in which plural types of insert sheets are stacked
10 in order in which they are inserted on each of said
plurality of trays, and wherein said discharging step
comprises discharging insert sheets from said stacking
means when said second stacking mode is selected by
said selecting means.

21. A control method according to claim 19,
further comprising the steps of stacking said sheets
having images formed thereon by said image forming
means in a fashion mixed with insert sheets inserted by
said inserter means, and carrying out post-processing
20 on the mixedly stacked sheets, by post-processing
means.

22. A control method according to claim 21,
wherein said discharging step comprises discharging
said insert sheets to a location other than said post-
25 processing means.

23. A control method according to claim 19,
wherein said detecting means is provided on a

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conveyance path for insert sheets.

24. A control method of controlling an image forming apparatus, comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

detecting by insert sheet discharging detecting means that said insert sheets have been discharged to mixed stacking means that stacks in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon; and

starting feeding of said blank sheets to said image forming means in response to detection of discharging of said insert sheets by said insert sheet discharging detecting means.

25. A control method of controlling an image

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forming apparatus, comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read
5 images by image forming means;

reading out insert sheets from a plurality of
insert sheets stacked by stacking means, which are fed
in a manner bypassing image formation by said image
forming means and inserted between the sheets having
10 images formed thereon by said image forming means and
inserting the read out insert sheets between the sheets
having images formed thereon by said image forming
means, by inserter means;

detecting by insert sheet discharging detecting
15 means that said insert sheets have been discharged to
mixed stacking means that stacks in a mixed fashion the
sheets having images formed thereon by said image
forming means and insert sheets to be inserted by said
inserter means between the sheets having images formed
20 thereon; and

starting reading of said insert sheets by
said inserter means in response to detection of
discharging of said insert sheets by said image formed
sheet discharging detecting means.

25 26. A control method of controlling an image
forming apparatus, comprising the steps of:

reading images recorded on originals by reading

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means;

forming images on blank sheets based on the read images by image forming means;

5 reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and inserting the read out insert sheets between the sheets
10 having images formed thereon by said image forming means, by inserter means;

detecting by insert sheet discharging detecting means that said insert sheets have been discharged to mixed stacking means that stacks in a mixed fashion the
15 sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon; and

starting sheet feeding of said blank sheet to said
20 image forming means when discharging of said insert sheet has been detected by said insert sheet discharging detecting means;

detecting with an image formed sheet discharging detecting means that said sheet having image formed
25 thereon has been discharged to said mixed stacking means; and

starting feeding of said blank sheets to said

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image forming means in response to detection of discharging of said insert sheets by said insert sheet discharging detecting means;

5 detecting by image formed sheet discharging detecting means that said sheets having image formed thereon have been discharged to said mixed stacking means; and

10 starting reading of said insert sheets by said inserter means in response to detection of discharging of said insert sheets by said image formed sheet discharging detecting means.

15 27. A machine readable storage medium storing instructions of a program for causing a computer to execute an image processing method comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

20 reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and
25 inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

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designating at least one position in said sheets having images formed thereon for insertion of at least one of the insert sheets by said inserter means, by designating means;

5 detecting an insert sheet to be inserted first by detecting means when a plurality of positions have been designated by said designating means; and

discharging insert sheets from said stacking means until the insert sheet to be inserted first is
10 detected, by discharging means when said detecting means detects that the insert sheet read out by said inserter means is not the insert sheet to be inserted first.

28. A machine readable storage medium according
15 to claim 27, wherein said stacking means comprises a plurality of trays for stacking said plurality of insert sheets in a divided manner, the control method further comprising a step of selecting by selecting
20 means between two types of stacking modes consisting of a first stacking mode in which a same type of insert sheets are stacked on each of said plurality of trays and a second stacking mode in which plural types of insert sheets are stacked in order in which they are
25 inserted on each of said plurality of trays, and wherein said discharging step comprises discharging insert sheets from said stacking means when said second stacking mode is selected by said selecting means.

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29. A machine readable storage medium according to claim 27, wherein the control method further comprises the steps of stacking said sheets having images formed thereon by said image forming means in a fashion mixed with insert sheets inserted by said inserter means, and carrying out post-processing on the mixedly stacked sheets, by post-processing means.

30. A machine readable storage medium according to claim 29, wherein said discharging step comprises discharging said insert sheets to a location other than said post-processing means.

31. A machine readable storage medium according to claim 27, wherein said detecting means is provided on a conveyance path for insert sheets.

32. A machine readable storage medium storing instructions of a program for causing a computer to execute an image processing method comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and

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inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

designating at least one position in said sheets
5 having images formed thereon for insertion of at least one of the insert sheets by said inserter means, by designating means;

detecting an insert sheet to be inserted first by detecting means when a plurality of positions have been
10 designated by said designating means;

interrupting a sheet inserting operation of said inserter means by interrupting means when at least one of the insert sheets has jammed while being inserted by said inserter means; and

15 discharging insert sheets from said stacking means until the insert sheet to be inserted first is detected, and further discharging insert sheets from said stacking means up to an insert sheet immediately preceding a same type of sheet as the at least one
20 jammed insert sheet, by discharging means, when said detecting means detects that the insert sheet read out by said inserter means is not the insert sheet to be inserted first after the apparatus has recovered from the interruption by removing the at least one jammed
25 insert sheet.

33. A machine readable storage medium according to claim 32, wherein said stacking means comprises a

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plurality of trays for stacking said plurality of
insert sheets in a divided manner, the control method
further comprising a step of selecting by selecting
means between two types of stacking modes consisting of
5 a first stacking mode in which a same type of insert
sheets are stacked on each of said plurality of trays
and a second stacking mode in which plural types of
insert sheets are stacked in order in which they are
inserted on each of said plurality of trays, and
10 wherein said discharging step comprises discharging
insert sheets from said stacking means when said second
stacking mode is selected by said selecting means.

34. A machine readable storage medium according
to claim 32, wherein the control method further
15 comprises the steps of stacking said sheets having
images formed thereon by said image forming means in a
fashion mixed with insert sheets inserted by said
inserter means, and carrying out post-processing on the
mixedly stacked sheets, by post-processing means.

20 35. A machine readable storage medium according
to claim 34, wherein said discharging step comprises
discharging said insert sheets to a location other than
said post-processing means.

25 36. A machine readable storage medium according
to claim 32, wherein said detecting means is provided
on a conveyance path for insert sheets.

37. A machine readable storage medium storing

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instructions of a program for causing a computer to execute an image processing method comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

detecting by insert sheet discharging detecting means that said insert sheets have been discharged to mixed stacking means that stacks in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon; and

starting feeding of said blank sheets to said image forming means in response to detection of discharging of said insert sheets by said insert sheet discharging detecting means.

38. / A machine readable storage medium storing

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reading with reading means image recorded on an original;

forming images on blank sheets based on the read
images by image forming means;

detecting by insert sheet discharging detecting means that said insert sheets have been discharged to mixed stacking means that stacks in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon; and

starting reading reading of said insert sheets by
said inserter means in response to detection of
discharging of said insert sheets by said image formed

sheet discharging detecting means.

39. A machine readable storage medium storing instructions of a program for causing a computer to execute an image processing method comprising the steps of:

reading images recorded on originals by reading means;

forming images on blank sheets based on the read images by image forming means;

reading out insert sheets from a plurality of insert sheets stacked by stacking means, which are fed in a manner bypassing image formation by said image forming means and inserted between the sheets having images formed thereon by said image forming means and inserting the read out insert sheets between the sheets having images formed thereon by said image forming means, by inserter means;

detecting by insert sheet discharging detecting means that said insert sheets have been discharged to mixed stacking means that stacks in a mixed fashion the sheets having images formed thereon by said image forming means and insert sheets to be inserted by said inserter means between the sheets having images formed thereon; and

starting sheet feeding of said blank sheet to said image forming means when discharging of said insert sheet has been detected by said insert sheet

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discharging detecting means;

detecting with an image formed sheet discharging
detecting means that said sheet having image formed
thereon has been discharged to said mixed stacking
means; and

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starting feeding of said blank sheets to said
image forming means in response to detection of
discharging of said insert sheets by said insert sheet
discharging detecting means;

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detecting by image formed sheet discharging
detecting means that said sheets having image formed
thereon have been discharged to said mixed stacking
means; and

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starting reading of said insert sheets by said
inserter means in response to detection of discharging
of said insert sheets by said image formed sheet
discharging detecting means.

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